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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,321

01/04/2006

Takashi Kamiya

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EXAMINER

SHECHTMAN, SEAN P

ART UNIT

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2121

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/563,321	Applicant(s) KAMIYA ET AL.	
	Examiner Sean P. Shechtman	Art Unit 2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. Objections withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22 recites the limitation " the workpiece model created by the workpiece-model creating unit " in line 2. There is insufficient antecedent basis for this limitation in the claim. It will be assumed to be a workpiece model created by the workpiece-model creating unit.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 16-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Although the claims are directed to an apparatus comprising various units, all of the units could reasonably be interpreted by one of ordinary skill in the art, in light of the instant specification (page 8, lines 17-29; page 61, lines 12-17), to be software, such that the apparatus comprising various units

is software, per se. Computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program’s functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program’s functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claim Rejections - 35 USC § 102

4. Rejections withdrawn.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 10-12, 15-18, 24, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/095512 to Kamiya (whole document) in view of U.S. Pat. No. 6,580,963 to Susnjara (hereinafter referred to as Susnjara). Although not relied upon in the rejection, in order to expedite the prosecution of the instant application, the examiner will reference the corresponding U.S. Pat. No. 6,850,814 to Kamiya (hereinafter referred to as Kamiya).

Referring to claims 10, 15, 16, Kamiya teaches an automatic programming method/apparatus/computer of selecting workpiece data, creating a workpiece model for lathe turning based on the selected workpiece data (Col. 5, lines 2-34; Col. 1, lines 52 – Col. 3, line 29), and creating a program for controlling a numerical control device based on a product model for lathe turning and the created workpiece model (Col. 13, lines 16-31; Col. 14, lines 30-54), the automatic programming method comprising:

workpiece selecting including

selecting workpiece data involving a product shape and having a smallest diameter for lathe turning around a turning axis, by comparing dimension data of the workpiece data with dimension data of the product model in a state in which the product model is arranged on the turning axis and the workpiece data is arranged so that a center axis of each workpiece matches a center of the turning axis (Fig. 6, Col. 6, lines 25-39, envelope shape and part shape; Col. 8, lines 26-37); and creating the workpiece model for lathe turning based on the selected workpiece data (Fig. 6, Col. 6, lines 25-39; Col. 8, lines 26-37).

Applicant argues that Kamiya does not teach selecting, from a plurality of workpiece data, workpiece data having a length equal to or longer than the product shape and a shortest length, however, this limitation is not required by the claim language as it is conditionally recited (i.e., when...). MPEP 2111.04 states, "Claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed...." Therefore, since the claimed condition would not ever reasonably occur in the prior art reference, the claimed condition is optional and

therefore not limiting as something made optional by the terminology used in the claim, and therefore fails to patentably distinguish over the teachings of the reference.

Furthermore, selecting is broad since the workpiece database is only required to have one workpiece registered.

11, 17. The automatic programming method according to claim 10, wherein a shape of the workpiece is a round bar, and the workpiece selecting further includes obtaining a longest distance between the turning axis and a fringe area of the product model; and selecting a round-bar work having a radius equal to or longer than the longest distance and a smallest diameter (Col. 8, lines 26-37).

12, 18. The automatic programming method according to claim 10, wherein a shape of the workpiece is a polygonal bar, and the workpiece selecting further includes obtaining respective distances between line segments parallel to respective fringes of the polygonal bar and tangent to the product model and the turning axis; obtaining a maximum value from among the obtained distances; and selecting a polygonal work model having an opposite side distance equal to or larger than twice of the obtained maximum value and a shortest opposite side distance (Fig. 6, Col. 6, lines 25-39; Col. 8, lines 26-37).

24, 25. The automatic programming method according to claim 10, further comprising: generating machine code based on the created workpiece model; and outputting the machine code from a programming apparatus to a numeric controller; the numeric controller executing the machine code transmitted from the programming apparatus (Col. 13, lines 16-31; Col. 14, lines 30-54; Col. 1, lines 12-31).

Referring to claims 10, 15, 16, Kamiya teaches all of the limitations set forth above, however, fails to teach selecting workpiece data from a workpiece database in which a material, a shape, and a dimension of a workpiece are registered.

However, Susnjara teaches workpiece data is selected from a workpiece database in which a material, a shape, and a dimension of a workpiece are registered (Fig. 3, elements 306, 307, 308, Col. 3, lines 44-50).

Kamiya and Susnjara are analogous art because they are from the same field of endeavor, machining.

At time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Kamiya with the workpiece database of Susnjara.

The suggestion/motivation would have been because Susnjara teaches automatically monitoring and sorting the scrap material from a CNC cutting cycle, according to size, shape, and type, then utilize said scrap as raw material in subsequent cutting cycles, based on an optimum nesting pattern (Col. 2, lines 45-49).

Or, because both references teach providing workpiece data, it would have obvious to one of ordinary skill in the art at the time that the invention was made to substitute one apparatus for providing workpiece data for the other to achieve the predictable result of providing workpiece data from a workpiece database.

6. Claims 10-12, 15-18, 21, 24, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,723,203 to Kishi et al (hereinafter referred to as Kishi) in view of U.S. Pat. No. 6,580,963 to Susnjara (hereinafter referred to as Susnjara).

Referring to claims 10, 15, 16, Kishi teaches an automatic programming method/apparatus/computer of selecting workpiece data, creating a workpiece model for lathe turning based on the selected workpiece data (Col. 4, lines 52 – Col. 5, lines 32), and creating a program for controlling a numerical control device based on a product model for lathe turning and the created workpiece model (Col. 11, lines 62 – Col. 12, lines 18), the automatic programming method comprising:

workpiece selecting including

selecting workpiece data involving a product shape for lathe turning around a turning axis, by comparing dimension data of the workpiece model with dimension data of the product model in a state in which the product model is arranged on the turning axis and the workpiece model is arranged so that a center axis of each workpiece matches a center of the turning axis (Col. 8, lines 53 – Col. 11, lines 43); and

selecting, when there is a plurality of workpiece data involving the product shape for lathe turning around the turning axis, workpiece data having a length equal to or longer than the product shape (Fig. 2D, Col. 5, lines 16-32; Figs. 2C, 2D; Col. 9, lines 1-15); and creating the workpiece model for lathe turning based on the selected workpiece data (Col. 11, lines 62 – Col. 12, lines 18).

Referring to claims 10, 15, 16, Kishi teaches all of the limitations set forth above, however fails to teach selecting workpiece data having a smallest diameter a shortest

length. However, Kishi teaches that various machining processes are performed when it is determined that the blank profile dimensions of diameter and length are too large. Therefore, the examiner respectfully submits that it would have been obvious to one of ordinary skill in the art at the time that the invention was made to selected the workpiece data having a smallest diameter and a shortest length to minimize wasted material since it is commonly known in the art that in lathes, it is preferable to reduce the diameter of a workpiece in incremental fashion (Although not relied upon in the rejection, see for example, col. 9, lines 32-42 of U.S. Pat. No. 3,751,651 to Pomella et al).

11, 17. The automatic programming method according to claim 10, wherein a shape of the workpiece is a round bar, and the workpiece selecting further includes obtaining a longest distance between the turning axis and a fringe area of the product model; and selecting a round-bar work having a radius equal to or longer than the longest distance (Col. 6, lines 58 – Col. 7, lines 4).

12, 18. The automatic programming method according to claim 10, wherein a shape of the workpiece is a polygonal bar, and the workpiece selecting further includes obtaining respective distances between line segments parallel to respective fringes of the polygonal bar and tangent to the product model and the turning axis; obtaining a maximum value from among the obtained distances; and selecting a polygonal work model having an opposite side distance equal to or larger than twice of the obtained maximum value and a shortest opposite side distance (Col. 4, lines 52 – Col. 5, lines 32, special blank).

21. The automatic programming method according to claim 10, wherein a workpiece selecting unit automatically performs the workpiece selecting (Col. 1, lines 14-47); and the workpiece selecting unit communicates the selected workpiece data to a workpiece-model creating unit (Figs. 2C, 2D; Col. 9, lines 1-15).

24, 25. The automatic programming method according to claim 10, further comprising: generating machine code based on the created workpiece model; and outputting the machine code from a programming apparatus to a numeric controller; the numeric controller executing the machine code transmitted from the programming apparatus (Col. 12, lines 1-18).

Referring to claims 10, 15, 16, Kishi teaches all of the limitations set forth above, however, fails to teach the selected workpiece data is selected workpiece data from a workpiece database in which a material, a shape, and a dimension of a workpiece are registered.

However, Susnjara teaches workpiece data is selected from a workpiece database in which a material, a shape, and a dimension of a workpiece are registered (Fig. 3, elements 306, 307, 308, Col. 3, lines 44-50).

Kishi and Susnjara are analogous art because they are from the same field of endeavor, machining.

At time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Kishi with the workpiece database of Susnjara.

The suggestion/motivation would have been because Susnjara teaches automatically monitoring and sorting the scrap material from a CNC cutting cycle, according to size, shape, and type, then utilize said scrap as raw material in subsequent cutting cycles, based on an optimum nesting pattern (Col. 2, lines 45-49).

Or, because both references teach providing workpiece data, it would have obvious to one of ordinary skill in the art at the time that the invention was made to substitute one apparatus for providing workpiece data for the other to achieve the predictable result of providing workpiece data from a workpiece database.

7. Claims 13, 14, 19, 20, 21-23, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya in view of Susnjara as applied to claims 10, 16 above, and further in view of U.S. Pat. No. 6,112,133 to Fishman (hereinafter referred to as Fishman).

Referring to claims 13, 14, 19, 20, 21-23, Kamiya/Susnjara teaches all of the limitations set forth above, however fail to teach the workpiece selecting further includes displaying workpiece data involving a product shape is in a list from the workpiece database in an increasing order of cutting amount; and highlighting minimum workpiece data from among the workpiece data displayed in the list; wherein a workpiece selecting unit automatically performs the workpiece selecting; and the workpiece selecting unit communicates the selected workpiece data to a workpiece-model creating unit; wherein a workpiece model created by the workpiece-model creating unit is stored in a memory; wherein the created workpiece model is stored in a memory.

However, Fishman teaches displaying workpiece data involving a product shape is in a list from a workpiece database in an increasing order of cutting amount; and highlighting minimum workpiece data from among the workpiece data displayed in the list (Fig. 8; Col. 6, lines 1-34); wherein a workpiece selecting unit automatically performs the workpiece selecting; and the workpiece selecting unit communicates the selected workpiece data to a workpiece-model creating unit; wherein a workpiece model created by the workpiece-model creating unit is stored in a memory; wherein the created workpiece model is stored in a memory (Fig. 5; Col. 4, lines 39 – Col. 5, line 42; Col. 8, line 52 - 9, lines 11).

Kamiya/Susnjara and Fishman are analogous art because they are from the same field of endeavor, machining.

At time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Kamiya/Susnjara with the GUI of Fishman.

The suggestion/motivation would have been because Fishman teaches a graphical user interface, for inputting part information for defining a plurality of faces, a set of features associated with each of the plurality of faces, and a set of machining operations and cutting tools associated with each element of the set of features, that allows multiple windows to be displayed and accessed simultaneously on a computer monitor (Col. 3, lines 23-45). Furthermore, Fishman teaches that new information entered into the system for a particular feature is automatically stored in the cycles database and the tools database and can be reused for programming other parts with similar features, thus eliminating repetitive data entry and storage in contrast to prior art

CAM systems that require entry of tooling and operations information in the sequence these operations are to be performed by the CNC machine for each new part (Col. 8, lines 33-46).

8. Claims 13, 14, 19, 20, 23, 24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kishi in view of Susnjara as applied to claims 10, 16 above, and further in view of U.S. Pat. No. 6,112,133 to Fishman (hereinafter referred to as Fishman).

Referring to claims 13, 14, 19, 20, 23, 24, Kishi/Susnjara teaches all of the limitations set forth above, however fail to teach the workpiece selecting further includes displaying workpiece data involving a product shape is in a list from the workpiece database in an increasing order of cutting amount; and highlighting minimum workpiece data from among the workpiece data displayed in the list; wherein a workpiece model created by the workpiece-model creating unit is stored in a memory; wherein the created workpiece model is stored in a memory.

However, Fishman teaches displaying workpiece data involving a product shape is in a list from a workpiece database in an increasing order of cutting amount; and highlighting minimum workpiece data from among the workpiece data displayed in the list (Fig. 8; Col. 6, lines 1-34); wherein a workpiece model created by the workpiece-model creating unit is stored in a memory; wherein the created workpiece model is stored in a memory (Fig. 5; Col. 4, lines 39 – Col. 5, line 42; Col. 8, line 52 - 9, lines 11).

Kishi/Susnjara and Fishman are analogous art because they are from the same field of endeavor, machining.

At time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Kishi/Susnjara with the GUI of Fishman.

The suggestion/motivation would have been because Fishman teaches a graphical user interface, for inputting part information for defining a plurality of faces, a set of features associated with each of the plurality of faces, and a set of machining operations and cutting tools associated with each element of the set of features, that allows multiple windows to be displayed and accessed simultaneously on a computer monitor (Col. 3, lines 23-45). Furthermore, Fishman teaches that new information entered into the system for a particular feature is automatically stored in the cycles database and the tools database and can be reused for programming other parts with similar features, thus eliminating repetitive data entry and storage in contrast to prior art CAM systems that require entry of tooling and operations information in the sequence these operations are to be performed by the CNC machine for each new part (Col. 8, lines 33-46).

Response to Arguments

9. Applicant's arguments filed 12/26/07 have been fully considered but they are not persuasive.

Applicant argues that Kamiya does not teach selecting, from a plurality of workpiece data, workpiece data having a length equal to or longer than the product shape and a shortest length, however, this limitation is not required by the claim

language. MPEP 2111.04 states, "Claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed...." Therefore, since the claimed condition would not ever reasonably occur in the prior art reference, the claimed condition is optional and therefore not limiting as something made optional by the terminology used in the claim, and therefore fails to patentably distinguish over the teachings of the reference.

Applicant argues that Kamiya does not teach dimensional data of the envelope shape is compared to dimensional data of a product model. The examiner respectfully disagrees. Kamiya clearly shows a product model 100 compared with a "cross sectional shape that passes through a point farthest from the turning axial core a among end points of the part shape 100" (Col. 6, lines 25-39). The examiner respectfully submits that the cross sectional shape that passes through a point farthest from the turning axial core a among end points of the part shape 100 as compared with the part shape 100 shown in Fig. 6, is dimensional data of the envelope shape compared to dimensional data of a product model.

Applicant argues that Kishi does not teach selecting workpiece data having a length equal to or longer than the product shape and a shortest length. The examiner respectfully disagrees. Kishi teaches the menu number 1 is selected and the blank profile is a cylinder, wherein the final part profile maximum value of Z along the Z axis is compared with the magnitude of the already entered value L of the blank along the Z axis, wherein the result is that L is greater than Zmax (Figs. 2C, 2D; Col. 9, lines 1-15). The examiner respectfully submits that the selected blank having L greater than Zmax is

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selecting workpiece data having a length equal to or longer than the product shape and a shortest length.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the examiner respectfully submits that it would have been obvious to one of ordinary skill in the art at the time that the invention was made to select the workpiece data having a smallest diameter and a shortest length to minimize wasted material since it is commonly known in the art that in lathes, it is preferable to reduce the diameter of a workpiece in incremental fashion (Although not relied upon in the rejection, see for example, col. 9, lines 32-42 of U.S. Pat. No. 3,751,651 to Pomella et al).

10. All other arguments with respect to claim 10-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (571)272-3754. The examiner can normally be reached on 9:30am-6:00pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SPS

Sean P. Shechtman

March 16, 2008

/Sean P. Shechtman/
Primary Examiner, Art Unit 2121